



LOCALIZED HYPERCEMENTOSIS ASSOCIATED WITH THE MANDIBULAR RIGHT FIRST PREMOLAR: A CASE REPORT

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ABSTRACT Hypercementosis is a non-neoplastic alteration characterized by excessive deposition of cementum on the root surface of a tooth. Hypercementosis may be generalized or localized. Localized hypercementosis is usually characterized by nodular enlargement of apical third of root. Although it is usually asymptomatic and discovered incidentally on radiographs, pronounced localized hypercementosis may occasionally present as a distinct mineralized mass. We present a case of a 40-year-old male who reported with pain in the lower right region of the jaw. Clinical examination revealed tenderness on percussion associated with tooth 44 and attrition. An intraoral periapical radiograph demonstrated a radiopaque mass associated with the apical region of the tooth. Following extraction, a firm cementum-like mass measuring approximately 3–4 mm was identified at the apex. Histopathological examination demonstrated predominantly mineralized cementum-like tissue with irregular mineralization/reversal lines, supporting a diagnosis of localized hypercementosis.

KEYWORDS : Hypercementosis; cementum; mandibular first premolar; tooth 44; radiopaque lesion; histopathology; excessive cementum deposition.

INTRODUCTION

Hypercementosis refers to excessive deposition of cementum beyond the normal contour of the root. It may involve part or the entire root and can be associated with local or systemic factors, although many cases are idiopathic. Radiographically, the affected root appears bulbous or enlarged while maintaining continuity with the root surface and, characteristically, the periodontal ligament space and lamina dura may remain identifiable. The condition is generally benign, but a focal cementum-like mass may require differentiation from other mineralized lesions, particularly benign cementoblastoma.

Hypercementosis occurs predominantly in adulthood, and the frequency increases with age, most likely secondary to cumulative exposure to causative influences. Radiographically, affected teeth demonstrate a thickening or blunting of the root, but the exact amount of increased cementum often is difficult to ascertain because cementum and dentin demonstrate similar radiodensities. Root areas affected by hypercementosis are separated from the periapical bone by a normal appearing periodontal ligament space; the surrounding lamina dura appears normal as well. Histopathologically, the periphery of the root exhibits deposition of an excessive amount of cementum over the original layer of primary cementum. The excessive cementum may be hypocellular or exhibit areas of cellular cementum that resemble bone (osteocementum).

Case Presentation

A 40-year-old male patient reported to the Department of Dentistry, North Bengal Medical College and Hospital, with a complaint of pain in the lower right region of the jaw. On clinical examination, tooth 44 (mandibular right first premolar) was tender on percussion and showed attrition. An intraoral periapical radiograph of the region was obtained for further evaluation.



Figure 1. Intraoral periapical radiograph showing a well-defined radiopaque mass in relation to the apical region of mandibular right first premolar (44).

Radiographic Findings

The intraoral periapical radiograph revealed a well-defined radiopaque mass closely associated with the apical region of tooth 44. The

appearance suggested excessive deposition of mineralized dental tissue. In view of the clinical symptoms and radiographic finding, extraction of the involved tooth was planned.

Gross Findings

Following extraction, a firm, hard, cementum-like mineralized mass measuring approximately 3–4 mm was observed at the apical aspect of tooth 44. The extracted specimen was documented photographically and submitted for histopathological examination.



Figure 2. Extracted mandibular right first premolar (44) with a firm, cementum-like mineralized mass measuring approximately 3–4 mm at the apical region.

Histopathological Findings

Histopathological examination demonstrated predominantly dense mineralized cementum-like tissue. The mineralized tissue showed irregular areas of mineralization and reversal/incremental lines. The overall microscopic appearance was compatible with excessive deposition of cementum. No histopathological features suggestive of a malignant or destructive neoplasm were identified in the examined section.

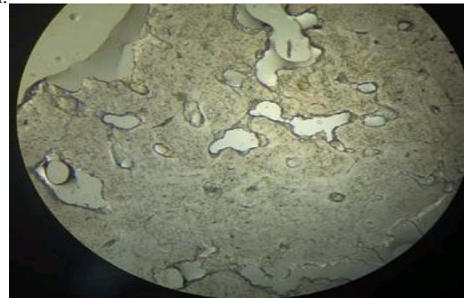


Figure 3. Histopathological section showing predominantly dense mineralized cementum-like tissue with irregular mineralization/reversal lines, consistent with excessive cementum deposition.

Final Diagnosis

Localized hypercementosis

Differential Diagnosis

The principal differential diagnosis for a localized cementum-like

mass associated with a tooth root is benign cementoblastoma. Cementoblastoma typically demonstrates a more proliferative lesion with prominent cementoblasts, cementoclasts, vascular connective tissue and a characteristic peripheral radiolucent rim. In the present case, the clinical setting, the small cementum-like mass and the histopathological appearance of predominantly mature mineralized tissue favor localized hypercementosis.

DISCUSSION

Hypercementosis is characterized by abnormal or excessive cementum deposition on the root surface. The condition may be localized or generalized and is frequently discovered incidentally. Possible associations include chronic periapical inflammation, occlusal stress, trauma, eruptive or developmental disturbances and certain systemic conditions, although an identifiable cause is not always present.

Factors Associated with Hypercementosis:

LOCAL FACTORS

- Abnormal occlusal trauma
- Adjacent inflammation (e.g., pulpal, periapical, periodontal)
- Unopposed teeth (e.g., impacted, embedded, without antagonist)
- Repair of vital root fracture

SYSTEMIC FACTORS

- Acromegaly and pituitary gigantism
- Arthritis
- Calcinosis
- Paget disease of bone
- Rheumatic fever
- Thyroid goiter
- Gardner syndrome
- Vitamin A deficiency (possibly).¹

The major clinical significance of hypercementosis is that excessive root enlargement can complicate extraction and may occasionally mimic a true cementum-producing neoplasm radiographically.

In the present case, the lesion was clinically detected because of pain associated with tooth 44. The radiopaque appearance and the subsequent discovery of a firm 3–4 mm cementum-like mass at the root apex raised the possibility of a localized cementum-producing lesion. Histopathology demonstrated predominantly mineralized cementum-like tissue without features of an aggressive neoplasm, supporting the diagnosis of localized hypercementosis.

CONCLUSION

This case highlights the importance of correlating clinical, radiographic, gross and histopathological findings when evaluating a localized radiopaque mass associated with a tooth root. Although hypercementosis is generally a benign and incidental finding, a focal exuberant cementum-like mass may clinically and radiographically mimic other cementum-producing lesions. Histopathological examination, together with careful clinicoradiographic correlation, is valuable for establishing the final diagnosis.

Figure Legends

- Figure 1. Intraoral periapical radiograph showing a well-defined radiopaque mass in relation to the apical region of mandibular right first premolar (44).
- Figure 2. Extracted mandibular right first premolar (44) with a firm, cementum-like mineralized mass measuring approximately 3–4 mm at the apical region.
- Figure 3. Histopathological section showing predominantly dense mineralized cementum-like tissue with irregular mineralization /reversal lines, consistent with excessive cementum deposition.

Financial or Other Competing Interests
None.

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